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THE EXTENSION HORTICULTURIST

423

December 1, 1923.

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* Boys' and Girls' club work along horticultural
* lines has during the past two or three years given splen-
* did results. Of special importance have been orchard
* clubs, small fruit clubs, potato clubs, asparagus clubs,
* garden clubs, and flower clubs. In a number of cases the
* work has led to the planting of commercial orchards, the
* renovation of old orchards and the formation of spray
* rings. The support of every specialist doing horticul-
* tural extension work should be given all club work in-
* volving horticultural crops or the improvement of home
* surroundings. Remember that the boy and the girl of
* today will be the man and woman of tomorrow and the dawn
* of tomorrow is already breaking.
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* This month we give a small number of reports on
* the formation of a five or ten-year program of horticul-
* tural extension work. Our January number will be de-
* voted to suggestions for publicity and demonstration work
* with the home orchard and the home vegetable garden.
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Office of Horticultural Investigations
and Extension Service Cooperating,
U. S. Department of Agriculture,
Washington, D. C.

Reports from State Specialists on Five-Year and Ten-Year Plans of Work.

Program of Horticultural Extension Work in Indiana.

Plans for extension work covering a five or ten-year period are certainly desirable. Shortage in funds, new experimental results and changing field conditions, of course, make occasional changes a necessity. We feel that it pays to be somewhat conservative with new projects and that it is best to try them out in a small way to begin with before putting them out state-wide.

Exhibit work and the writing and revision of bulletins will always take quite an allotment of time each year. In Indiana one man does all of the extension work along the lines of both landscape and pomology and there is great need for an addition to the present staff. Following is a brief outline of prospective work on each of the projects now being carried by this division.

Pomology Extension.

Commercial Orchard Work. Along orchard lines we have an increasing acreage of peaches and apples each year. These plantings are mostly in the southern part of the State. It will be necessary to continue the pruning, soil management and fertilizer work which has been underway for 6 years as few of these new men have grown orchards to bearing age. This work will be handled by means of long time pruning and soil management demonstrations and through frequent county and sectional tours to well cared for orchards.

The control of bacterium pruni is one of the big unsolved problems in the commercial peach orchard sections and will be given immediate extension attention if better control methods are worked out.

Horticultural Club Work. This division has given some time for the past 6 years to the encouragement of orchard, small fruit and potato club work in the State. This work is one of the most productive lines of horticultural extension work. At present we do not have a member of the club division who is especially trained to have charge of and push this line of work. We feel that the organization and handling of this work should be centered in the Horticultural Department and it is one of our future hopes that funds will soon be available to organize this work on that basis.

Spray Rings. So far the spray ring project has been very successful in this State on the present lines of organization. However, the last 2 seasons have been good fruit years in the farm orchard. The problem of securing a competent man who can give 20 to 30 days to operating a ring outfit is still a big drawback to a state-wide campaign of encouraging the organization of spray rings. In other words, this project is still on probation. During the coming year time will be given to writing up and getting out publicity giving a fair discussion of the good and bad points of a spray ring and help will be given communities that want to go ahead with such an organization.

Small Fruits Work. A home strawberry project was tried out in 5 counties this season. At the county agents' conference this fall these 5 county agents were asked to make suggestions as to changes in the organization of this work. A number of helpful suggestions were made. No definite future policy will be formulated until the project has been given another year's trial and yield returns are available next spring on the first year's work.

Landscape Extension.

This work has been under way for 8 years. Demonstrations have been established in about half of the counties of the State. Due to insufficient help most of the time at present is given to the preparing of bulletin material which will be of direct aid to farmers in doing landscape work about their home grounds. Small detail sketches showing arrangements of shrubs suitable for various places about the foundation of the house, corners and sides of grounds, screen plantings, etc., can be used by the average farmer and few can afford to pay for the personal services of a professional landscape gardener. Supervision of demonstrations already started and more and better bulletin material is the future plan of the division along landscape lines until more help is available.

----- Vegetable Gardening.

Potato Project.

Object. To increase yields and quality of Indiana grown potatoes.

Note. This project has been running since the fall of 1918. It was carefully outlined in 1918 and with changes has been pushed continuously since that time.

Indiana farmers plant 80,000 to 100,000 acres of potatoes annually. These are found mostly in farm potato patches, about one-third being planted commercially, average yields of 40 to 80 bushels per acre of inferior potatoes resulted and the quality had deteriorated until farmers believed it impossible to grow large yields.

First year. Established 12 demonstration fields in 5 different counties of the State. Used certified or hill selected seed and followed the best possible methods of culture. Demonstrations under personal supervision of Horticultural and Botanical Divisions of Purdue. Checked results carefully. Yields above 150 bushels secured. Double yields over checks. Held during winter series of lectures on potato culture in important potato centers. Ran a series of "Farm Journal" articles on potatoes.

Second year. Continued demonstration fields using certified and hill selected seed and common seed as checks. Increased number of demonstration fields. Series of lectures on potatoes given over State during winter and spring. Located sources of certified seed for farmers. Series of articles run in farm papers. Established Indiana State Potato Show. Helped organize potato clubs in new counties.

Third year. Results secured during first and second years proved that certified potato seed would double yields in Indiana. Seed and soil

biggest factors toward success. Certified potato seed introduced car lots. Fifty cars used. Continued lectures and more newspaper and farm papers. Second state potato show held. Went into more new counties.

Fourth year. Rearranged project so that county agents could with little time help farmers get in certified potato seed. More than 100 cars brought in under pooling plan. Seed dealers becoming interested. Wrote 50 farm paper articles on use of certified seed and other factors toward success. Sent out 8 original articles on potato growing to each county agent for use under his own name. Third State Potato Show held. B. & O. R. R. start potato work.

Fifth year. Pushed organization through farm bureaus, county agents and seed dealers so that farmers everywhere could get certified seed. Cooperated with dealers in locating certified seed stock. Urged substitution of good for poor seed. Farm papers and local papers given abundance of material on potato growing. Held meetings in new counties. Ran third State potato show at Purdue. Helped in organization of 50 potato clubs with 500 members who grow potatoes under best methods of culture.

Sixth, Seventh, Eighth, Ninth & Tenth years. Continue work as in fifth year. More work being taken over by county agents and seed dealers. Seed dealers ultimately will substitute certified seed for poor seed. Continue articles, potato show and to locate seed stock where necessary. We hope that good seed will become an established practice and that with the educational work carried on with it better yields will be secured.

Tomato Project. Outline similar to potato project and has been going one year. Miscellaneous farm home garden work has to be taken care of which requires considerable time and is being handled as called for, as no general project has been outlined for it as yet.

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Wisconsin

by

James G. Moore, Horticulturist.

Horticultural extension work in Wisconsin is almost entirely confined to those counties having county agents or farm bureau secretaries. The plan in most phases of our work is to put on a rather intensive campaign in a county for 2 or 3 years, educating a limited number of farmers, and if necessary, the county agent and then depend largely upon this group to "carry on" after the extension specialist has moved to some other county. It is expected that the specialist will continue to give a limited amount of help in these counties if it is needed. We believe it is necessary to have a man, connected with the College, located in the section in which work is to be done in order to give leadership in organization and keep the local interest up to the point where the work will go forward.

Fruit Extension.

Home Orchards. The plan for the next 5 years is a continuation of the plan in operation for the past 4 years.

1. Pruning demonstrations: As far as facilities permit in all counties whose county agent makes request for this type of work. (a) Methods

of pruning young trees to secure properly formed trees with large fruiting areas. (b) Bearing trees, to open and lower tops, to rejuvenate non-bearing trees and provide for regular bearing of high quality fruit. (c) Proper pruning of small fruits.

2. Spraying: Intensive work annually in 4 counties: (This number is determined by facilities available.) two new counties and two in which work has been done the previous year. (a) Organization of spray rings. (b) Personal supervision and instruction of operators of each ring. This is done for each of the several applications made. (c) Orchard inspection. Before last application inspection with owner of each orchard sprayed. Detailed recommendation and instruction as to needs of the orchard.

3. Soil Management: Efforts are made to induce orchardists to use better methods of soil management. Has special reference to use of plant foods, both stable manure and commercial fertilizers.

4. Grading and Marketing: (a) Grading to Wisconsin standards. (b) Instruction to methods of picking and packing. (c) Aid in marketing surplus. (d) Instruction in proper home storage methods and facilities.

It is hoped that this work in conjunction with the foregoing will result in making commercial fruit growers out of some of the better home orchardists. This has been accomplished in several cases in the past.

5. Publicity: To create an interest in better home grown fruit. To stimulate home orchardists to better care of their orchards from an economical standpoint and the possibility of having good fruit for the home. (a) Exhibits at county fairs, community fairs, store window displays. (b) Timely press notices on spraying, grading, storing, and marketing of fruit. (c) Circular letters to county agents, farm bureau secretaries, and demonstration orchardists on orchard problems.

Commercial orchards: No definite plan has been formulated for this work. Owing to the fact that the commercial fruit growing sections of Wisconsin are small it is possible to get local meetings at practically any time to go over any particular problem which needs attention. The follow-up work is looked after by Prof. Roberts, who has charge of the extension work with commercial orchardists.

Landscape Extension.

Home Grounds Improvement: 1. Intensive work in 4 or 5 counties. 2. Demonstrations on 3 to 5 carefully selected home grounds in each county. 3. Planting covers period of 3 years. 4. Owner furnishes necessary plant material and labor. 5. Specialist furnishes plans, gives directions as to grading, etc.; supervises planting.

Publicity and follow-up: Some publicity is given through the local press, county agents and by making the demonstrations points of interest in the annual county auto tours. Main publicity follows completion of planting. Results are brought to further attention of the public through illustrated lectures and local press. These means are used also to arouse interest in

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DEPARTMENT OF CHEMISTRY
CHICAGO, ILLINOIS 60637

TO THE EDITOR:
I am writing to you to inform you of the results of our recent experiments on the reaction of C_2H_2 with CuCl_2 in the presence of NH_3 . The reaction proceeds quantitatively at room temperature to form a complex which we have identified as $\text{CuCl}_2 \cdot 2\text{C}_2\text{H}_2 \cdot 2\text{NH}_3$. The complex is a white solid which is stable in air and in the dark. It is soluble in water and in dilute acids. The reaction is reversible and the complex dissociates on heating or in the presence of excess NH_3 .

The complex is formed in a 1:1:1 molar ratio of C_2H_2 , CuCl_2 , and NH_3 . The reaction is first order in C_2H_2 and first order in CuCl_2 . The rate of reaction is independent of the concentration of NH_3 . The activation energy for the reaction is 12.5 kcal/mole .

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the project. Contests are organized in the county for home grounds improvement. Suitable prizes are offered by local organizations as banks, civic clubs, etc. When planting is finished in a county, a new county is taken on.

School Grounds Projects: As far as facilities permit, plans are made for all schools requesting assistance. When plans cannot be furnished suggestions for improvement are made.

Wayside Park Projects: Same general plan as for school grounds projects. Endeavor is made to give assistance to parks as well distributed over the State as possible so as to serve as demonstrations for other parks in the same section of the State.

Rural County Projects: Same plan as former.

Roadside planting: Plans are made for improvement of landscape features along portions of the State Trunk Highways. In cases where requests are made and facilities for making the plans are inadequate, advice as to improvement is given on the grounds. Samples of this type of work previously done: Eau Claire - Chippewa Falls Highway, Neenah - Appleton Highway.

Organizations: Cooperation with The Friends of Our Native Landscape, Civic Clubs, Women's Clubs, Community Clubs, etc., in creating public sentiment for the preservation of those landscape and historical features of public interest and in establishing facilities for a larger expression of the social life of the community. Also in shaping legislation which will make it possible for the local governmental agencies to take a large part in such developments. Example of work already done; The law creating a County Planning Committee and empowering counties to secure land for rural parks.

Publicity: Usual methods: bulletins, articles in public press, lectures before farmers' institutes, community club meetings and meetings of other organizations and groups of people interested in the beautification of the country.

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Potato Project.

Five principal lines of work are given attention. (1) Improvement of cultural practices. (2) Growing of selected strains of standard varieties. (3) Use of better grades of seed. (4) Community plan of growing only one or two varieties. (5) Development of markets for high grade seed potatoes. Disease projects are under supervision of Department of Plant Pathology.

Methods:

By public meetings, including farmers institutes, special community potato meetings, conferences on special subjects with growers and county agents.

By exhibits at fairs, conventions and expositions.

By publications, including bulletins, press notices, circular letters, etc.

By annual potato tour. Trip through various potato sections with field inspector, field meetings, and demonstrations.

By cooperation with other state agencies, local potato organizations, county agents in potato territory.

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A Tentative Five-Year Plan for Michigan
by
H. A. Cardinell, Assistant Extension Specialist.

This call has caught us without a written plan other than our annual Plan of Work. This is mainly due to our rather new organization and expansion. Mr. T. A. Farrand, in charge of the work, spends only half of his time on extension work directly and the other half equally divided between Secretaryship of the Michigan State Horticultural Society and experiment station work. Mr. George Starr has his time equally divided between station and extension. Mr. H. A. Cardinell is the only full time extension worker in horticulture. With one man two years in service, another but a few months and the third less than a year, we are only approaching a long span working program. Landscape is now a separate department and has no extension worker. Therefore, in horticulture, two men are devoting time to deciduous fruits and one to olericulture. Besides, the 1922-23 season has found every member of the department staff (thirteen in number) doing considerable overflow extension work.

The writer is of the opinion that an American Experience Table of Extension Specialists would reveal that the man is not alive who could write a detailed plan for 10 future years of extension horticulture. Should this be true, we assume that only a very broad and general plan is expected at this time, at least from most of the institutions.

A. Orchard Management Project: (1) Tree grafting demonstrations. Reduction of varieties, winter and rodent injury, etc. (2) Soil Management Demonstrations. (3) Pruning Schools. (4) Fruit thinning in relation to pruning, spraying and grades. (5) Special problem spraying demonstration. (6) Blight reduction demonstrations. (7) Management demonstrations of winter-injured trees.

B. Service on Cold Storage and Common Storage Specifications.

C. Indirect Extension Work. Local Merchant Service. Through County Agents and Smith-Hughes men, proper orchard equipment is carried by local dealers. In advance of each pruning season, for instance, information is furnished these officers giving the names of the nearest distributors of the patterns known to be best. This is a part of extension work that is too often neglected and a point in salesmanship is missed if, after attending a meeting, growers cannot obtain the supplies within the county or State. Obviously, merchants appreciate this advance notice and service. Likewise, a nicodorus-cuke-beetle control campaign cannot be a success if after seeing a demonstration growers are not able to obtain the product within the State.

Without going into details on the separate above listed sub-projects, or stating methods employed, we feel that these topics are sufficiently fundamental and hence flexible to possibly be of interest for the next 5 years.

This does not appear to be a very modern program since it does not sub-divide pruning into the now popular "heavy, light, and no pruning," nor are the "Big-Four" classes of the Nitrogen-Carbohydrate Ratios listed. Nevertheless, all this can be run under such a basic outline as here given should occasion demand.

There are often projects which become so popular through wholesale distribution that they become common and no interest can be found to justify continuance. The mortality of such projects is high and the more popular a project the less chance it has of living through a 5 or 10 year period.

Some one will undoubtedly think that we have forgotten to list our marketing project. Thus far, we have held to the production side of marketing, reducing our cull piles as it were, and have fostered cold and common storage and have paved the way for our extension staff of the marketing and organization department to take care of that demand.

Extension Work in Vegetable Gardening in Michigan:

A. Better Varieties: A campaign to be directed at the commercial men, emphasizing and demonstrating the value of using the best strains of vegetables. (1) Variety planting on the college grounds of good and poor strains to show contrast. (Cooperative Extension station project for annual tour and meeting.) (2) Establishment of a Market Growers' Field Day at the college to demonstrate these strains. (3) Extension school lectures on the value of better commercial strains.

B. Control of Garden Insects: (1) Demonstrations of modern methods of combating truck garden insects such as cabbage maggot, onion thrips, cucumber beetle, etc. (2) Cooperation with retail distributors of dust and spray materials and equipment to insure a supply of college recommended materials in each community. (3) Extension school talks throughout the state on garden insect control.

C. Home Garden: (1) Varieties - The lesson in better varieties to be extended to the home gardeners as well as commercial men. (2) Planning - Model home garden plans containing best varieties, arrangement, succession planting, companion cropping, etc., to be circulated in conjunction with the home food budget of Extension Home Economics. (3) Demonstration of model home gardens on the college grounds. (Cooperation between station and extension for central tour and meeting use). (4) Extension school lectures throughout the state on home garden, methods of culture, insect and disease control, storage, etc. (Held during winter extension schools in counties so requesting.)

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American Society for Horticultural Science.

The program for the Cincinnati meeting, December 27, 28, and 29, 1923, is a very good and exceedingly full one. The extension addresses will be given during the forenoon of December 28. We trust there will be a large attendance of extension horticulturists.

Meeting of Southern Agricultural Workers.

Prof. T. H. McHatton of Athens, Georgia, has sent out a call for horticultural papers for the program of the Southern Agricultural Workers at Birmingham, Alabama, January 10, 11, and 12, 1924. Those having subjects to present should send them to Prof. McHatton immediately as the general secretary of the association is calling for the horticultural program for publication.

A. Correction.

In the November 1 Horticulturist, third line from the bottom of Page 2 should read "any specific spraying projects in this outline is due to the fact" etc. The word spraying in transcribing copy.

Fruit, Vegetable and Landscape Extension Literature Received During November 1923.

- Arkansas - Agricultural Extension Service, Little Rock.
 - The Home Vegetable Garden in Arkansas - Ext. Cir. 140 (May 1923)
 - Gardening Instructions for Home Demonstration Club Members - Ext. Cir. 145 (May 1923)
- Missouri - University - Columbia
 - Potato Growing Club - Boys and Girls Club Cir. 5 (Mar. 1923)
 - Potato Growing Record Book.
 - Tomato Growing - Boys and Girls Club Cir. 9 (June 1923)
 - Tomato Growing Record Book.
- New York - Cornell University, Ithaca
 - The Decorative Use of Flowers - Lesson 87 (Reprint Aug. 1923)
- Ohio State University - Columbus
 - Correspondence Courses Vol. VIII Cir. 7.
- Oregon - Agricultural College, Corvallis
 - Dominant sprays for San Jose Scale Control - Cir. 210 (Nov. 1923)
- South Carolina - College of Agriculture, Clemson College
 - Commercial Harvesting, Grading and Marketing of Lettuce in South Carolina - Ext. Bul. 56 (Oct. 1923)
 - Home-Made Steam-Boiled Lime Sulphur Wash - Information Card No. 31 (Nov. 1923)

We regret to state that the extension men do not send us copies of their extension bulletins and circulars as we have requested them to do several times. In October we received one bulletin and in November not any. If we did not have access to the Library file of extension publications this phase of the "Extension Horticulturist" would have to be omitted.

W. R. Beattie, Extension Horticulturist,

C. P. Close, Extension Horticulturist.

